Case Study - Conservation Effects

Type of Operation and Location: **Cropland, Preble County, Ohio**

Resource Setting:	**Resource Problem(s):**	**Benchmark System:**
Moderately sloping (3-6%) Corwin, Miami, and Celina soils	Moderate sheet and rill erosion, gully erosion, nutrient and pesticide runoff	Conventional till corn and soybeans, no soil testing, excessive use of pesticides, no grass waterways.
Client Objective(s): Reduce erosion, maintain and improve yields, farm more efficiently.		**Planned Treatment System:** • Conservation Crop Rotation ; No Till; Nutrient Management; Pest Management; Grassed Waterways Meets Resource Management System Criteria

Comparison of Effects of Benchmark and Treatment Option

Actions Before Treatment (Kinds, Amounts, Timing of the benchmark system)	**Effects Before Treatment** (Effects of continuing the benchmark system)	**Impacts After Treatment** (Change from the before treatment to the applied treatment)	**Decisionmaker Evaluation** (+) Feels Positive about the change (-) Feels a drawback about change
Corn: - Apply row starter N,P,K - Spring Broadcast K - Sidedress Liquid N - Three tillage passes prior to planting - Apply pre-emerge herbicide after planting - One rotary hoe operation - Post emerge herbicide Soybeans: - Three tillage passes prior to planting - Plant 30 rows with starter P & K - Fall broadcast K - Apply Pre-emerge herbicide after planting - 2 row cultivations - Apply Post-emerge herbicide Gullies: Disk annually Fertilizer: -Not field specific - use what always used.	• Soil loss avg 9 tons/ac/yr • Sediment, nutrients, pesticides moving off in surface runoff • Gullies becoming more defined and deeper. • Average 5+ gallons of fuel per acre • Average 2 hours per acre • Need hired labor for tillage • Yields are difficult to maintain	• 7 tons/ac/yr of soil saved • Nutrient, pesticide, and sediment runoff is minimized • Gully erosion is eliminated. • • Less equipment and equipment maintenance • Easier planting and harvesting conditions • Yields are increasing • No hired labor needed • Average .75 hours/acre • Average 1 gallon of fuel per acre • Nitrogen reduced by 15% • P & K needs reduced by 50% • Pesticide amount and cost reduced 15% • 3 less trips across the field • Soybeans solid seeded	• (+) Water quality improved with less sediment, nutrients, and pesticides. • (+) • • (+) less wear and tear on equipment (-) loss of cropland • (+) saves time and money • • (+) less stress, less soil compaction • (+) • (+) Saves $3000 per year • (+) Reduced need for hire labor • (+) Saved money • (+) Saved money & better yield • (+) Saved money & better yield • (+) Saved money & good weed control • (+) Save time and money • (+) increased yield and better weed control; (-) purchased new no till drill
